

THERE IS CLAIMED:

- 1.** A secure method of deciding on the 0 or 1 state of each bit of a pattern repeated by a static communication channel in a data decompression device adapted to decompress a block of data including a group of data from a set of data frames compressed by a data compression device, said group including all the active channels of the set, it being understood that the frames have a structure defined in accordance with a plurality of time slots, each time slot of a first group of time slots is divided into a plurality of information bits carrying a respective communication channel, and the active state, respectively the static state, of each channel is assigned if the comparison of the content of this channel in the N bits compared between the N frames of a reference pattern with the corresponding N bits of the N frames of the analysis window, where applicable repeated L times, shows a variation in the content for at least one of the bits, respectively a stability of the content for all of the N bits, where N is an integer greater than or equal to 1,
which method includes:
 - a step of transmitting a descriptor specifying the static or active state of the transmission channel,
 - a step of transmitting the content of the channel that has gone to the static state on the L*N frames of the analysis window after it goes to the static state,
 - a step of statistical analysis, over the analysis window carrying the L*N frames after the channel changes to the static state, of the state of each bit of the pattern repeated by said channel, based on a majority vote of the states obtained for each bit of the channel considered on the L groups of frames in the analysis window, which statistical analysis is intended to reconstitute the original state of each bit of the pattern.
- 2.** The method claimed in 1, wherein a counter is associated with each bit carried by said channel and the statistical analysis step includes a step of initializing the counter at the start of the analysis window, a convention for incrementing or decrementing the counter being established in accordance with the successive binary values taken by each bit of the channel within the L groups, the sign of the final value of the counter deciding on the state present in the majority in the L groups.
- 3.** The method claimed in claim 2, wherein the number of bit transmission errors corresponding to the specified channel is identified by the following equation in

which $NT = L \cdot N$ corresponds to the number of frames contributing to the composition of an analysis window:

$$N_e = (1 + (NT/N) - |X|) / 2.$$

4. The method claimed in claim 1, wherein the number of analysis windows used for the process of repeating the static pattern as a function of the existing transmission quality between the compression device and the decompression device is varied.
5. The method claimed in claim 4, wherein information is integrated into a header of the block of data to specify the number of analysis windows used.
6. The method claimed in claim 5, wherein the number of analysis windows used for the process of repeating the static pattern is updated as a function of the error rate measured on the connection.
7. A data transmission system comprising a compressor and a decompressor and adapted to implement the method claimed in claim 1.